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R09

Code No: 09A1EC01

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech I Year Examinations, November/December – 2013
COMPUTER PROGRAMMING AND DATA STRUCTURES
(Common to all Branches)

Time: 3 hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks
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1.a) Draw the block diagram of a computer system. Distinguish between Compiler and Assembler.
b) Draw a flow chart for finding the factorial of a given number. [15]

2.a) Explain with suitable examples the use of break and continue statements in C.
b) Write a C program to generate all the prime numbers between 1 and N, where N is a value supplied by the user. [15]

3.a) Explain the following storage classes in C with examples:
i) Extern ii) Static.
b) Write a C program that uses a function to find the maximum integer in a given array of integers. [15]

4.a) Discuss the various valid arithmetic operations that can be performed on pointers in C.
b) Write a function in C called 'insstring' to insert one character string into another string. The arguments to the function should consist of the source string, the string to be inserted, and the position in the source string where the string is to be inserted. [15]

5.a) Differentiate between a Structure and Union in C with an example.
b) Represent a complex number using a structure in C. Write a C program that uses functions to perform the following operations:
i) Addition of two complex numbers ii) Subtraction of two complex numbers. [15]

6.a) Write a C program to copy the contents of one file to another. Both the file names are supplied as command-line arguments.
b) Discuss with syntax the purpose of the ferror() and feof() functions in C. [15]

7.a) Write a recursive C function to search for a given integer key in a given sorted array of integers using binary search.
b) Explain with an example how a given list of integers can be sorted into ascending order using bubble sort. [15]

8.a) Explain with an example how a given postfix expression is evaluated using stack.
b) Write a C function for deleting an integer element from a linked queue of integer elements. [15]

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